1998

Earthquakes in Nebraska

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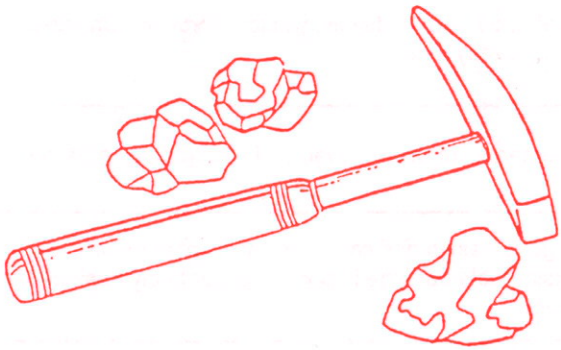
NEBRASKA GEONOTES

EARTHQUAKES IN NEBRASKA

Raymond R. Burchett



NEBRASKA GEOLOGICAL SURVEY

Conservation and Survey Division
Institute of Agriculture and Natural Resources
University of Nebraska-Lincoln

September 1990

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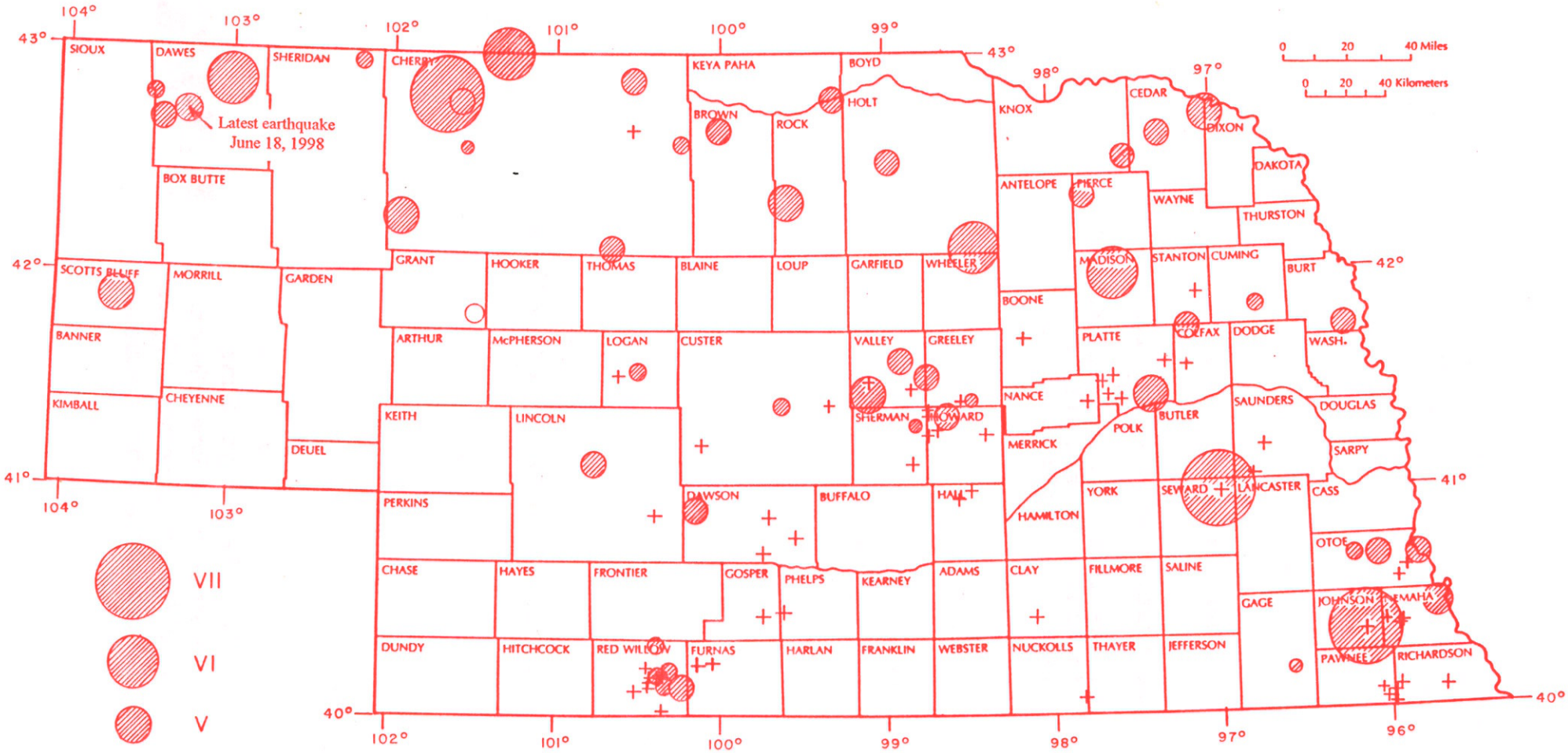
Comparison of Modified Mercalli and Richter scales

MODIFIED MERCALLI SCALE		RICHTER SCALE	GENERAL DAMAGE
INTEN-SITY	EFFECT	MAGNITUDE	
I	Not felt except by a very few under especially favorable conditions.	1.5	None
II	Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.	2	
III	Felt quite noticeably by persons indoors, especially on upper floors of buildings.Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration similar to the passing of a truck. Duration estimated.	2.5	
IV	Felt indoors by many, ourdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.	3	
V	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.	3.5	Slight
VI	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.	4	Moderate
VII	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.	4.5	
VIII	Damage slight in specially designed structures; considerable damage in ordinary sub-stantial buildings with partial collapse. Damage great in poorly built structures.Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.	5	Considerable
IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.	5.5	
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.	6	Severe
XI	Few, if any, (masonry) structures remain standing. Bridges destroyed. Rails bent greatly.	6.5	
XII	Damage total. Lines of sight and level are distorted. Objects thrown into the air.	7	Heavy (Major Earthquake)
		7.5	
		8	Tremendous (Great Earth-quake)

(Adapted from D.W. Steeples, 1987 - Kansas Geological Survey)

The strength of an earthquake may be indicated by either intensity or magnitude. Intensity describes the effect of an earthquake on humans, on man-made structures, or on the earth,s surface and is measured or rated on an intensity scale such as the Modified Mercalli (MM) Scale. Magnitude is a measure of the quantity of energy released by an earthquake, recorded by instruments, and expressed by the Richter Scale.



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